

WHAT IS CLAIMED IS:

1. A method for providing and communicating data message alerts stored on a medical device, the method comprising:
  - interrogating the medical device with a computing device; and
  - 5 upon interrogating the medical device, communicating via the computing device, a data message alert stored within a memory of the medical device wherein the data message alert originates from outside the medical device. (OR wherein the DMA does not originate within the medical device)
- 10 2. The method of claim 1, further comprising:
  - detecting whether the data message alert is stored within the memory of the medical device wherein the data message alert is communicated in response to detecting the data message alert stored within the memory of the medical device.
- 15 3. The method of claim 2, wherein the data message alert is stored in a dedicated alert field within the memory of the medical device.
4. The method of claim 1, further comprising:
  - receiving a new data message alert; and
  - 20 in response to receiving the new data message alert, saving the new data message alert to the memory as the data message alert.
5. The method of claim 1, further comprising:
  - receiving a revised data message alert; and
  - 25 in response to receiving the revised data message alert, saving the revised data message alert to the memory as the data message alert.
6. The method of claim 1, prior to interrogating the medical device, further comprising at least one of initializing and installing the medical device.

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7. The method of claim 6, wherein initializing the medical device includes at least one of the following:

clearing the memory of any data message alerts; and  
entering a new data message alert.

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8. The method of claim 6, wherein installing the medical device comprises implanting the medical device in a patient.

9. The method of claim 6, further comprising:

10 uninstalling the medical device; and  
in response to uninstalling the medical device, interrogating the medical device.

10. The method of claim 9, wherein uninstalling the medical device comprises explanting the medical device from the patient.

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11. The method of claim 1, wherein the memory of the medical device comprises a random access memory (RAM).

12. The method of claim 1, further comprising:

20 requesting the data message alert; and  
in response to requesting the data message alert, interrogating the medical device.

13. The method of claim 3, wherein interrogating the medical device comprises:

25 establishing communication with the medical device; and  
reading the dedicated alert field.

14. The method of claim 2, further comprising, in response to detecting the data message alert stored, uploading the data message alert to a database.

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15. The method of claim 1, wherein communicating the data message alert via the computing device comprises communicating the data message alert in at least one of a variety of data formats compatible for storage in the memory.

5 16. The method of claim 15, wherein at least one of the data message alert and the variety of data formats compatible for storage in the memory include at least one of the following data formats:

ASCII text;  
multi-media;  
10 audio;  
audio encoding schema;  
XML; and  
XML schema definition.

15 17. The method of claim 16, wherein communicating the data message alert comprises at least one of the following:

displaying a text pop-up window containing a text message alert via a display device of the computing device;

20 displaying and playing a pop-up multi-media message alert via the display device and an audio output device of the computing device;

playing an audio message alert via the audio output device of the computing device; and

displaying a text pop-up window containing an XML text string message alert via the display device of the computing device.

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18. The method of claim 4, wherein receiving a new data message alert comprises at least one of the following:

receiving text of the new data message alert via a first input device of the computing device;

5 receiving a multi-media recording of the new data message alert via a second input device of the programmer;

receiving an audio recording of the new data message alert via one of the second input device and a third input device of the computing device; and

10 receiving an XML text string of the new data message alert via one of the first input device and the second input device of the computing device.

19. The method of claim 3, wherein detecting whether a data message alert is stored in the memory comprises detecting whether the dedicated alert field is null.

15 20. The method of claim 1, further comprising:

receiving an acknowledgement of the data message alert communicated; and

in response to receiving the acknowledgement, terminating communication of the data message alert.

20 21. The method of claim 3, further comprising:

receiving a request to clear the data message alert from the dedicated alert field;

and

in response to receiving the request to clear, clearing the data message alert from the dedicated alert field whereby the dedicated alert field is rendered null.

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22. The method of claim 1, wherein the data message alert comprises at least one of patient-specific information and medical device-specific information.

23. The method of claim 14, wherein the data message alert comprises at least one of the following:

a message communicating that at least one of the medical device and a patient utilizing the medical device are enrolled in a clinical study;

5 a message communicating a drug regime for the patient utilizing the medical device;

a message communicating information concerning a component of the medical device; and

10 a message communicating a reminder to send in a product registration for the medical device.

24. The method of claim 23, wherein the data message alert comprises the message communicating that at least one of the medical device and the patient utilizing the medical device are enrolled in the clinical study and wherein the method further  
15 comprises:

uploading at least one of patient data and medical device data to the database; and

utilizing the data message alert to verify that at least one of the patient data and the medical device data are being uploaded to a correct study registry in the database for  
20 the clinical study.

25. The method of claim 19, further comprising in response to detecting that the dedicated alert field is not null, including the data message alert in any reports generated by the programmer until the dedicated alert field is rendered null.

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26. The method of claim 25, wherein the data message alert comprises a text message alert and wherein including the data message alert in the any reports generated by the programmer comprises printing the text message alert in any printouts generated by the programmer.

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27. The method of claim 26, wherein the text message alert is printed as header text of the any printouts generated by the programmer.

28. The method of claim 1, further comprising:

5       interrogating the medical device with at least one wireless device in response to the medical device being within a communications range of the at least one wireless device; and

          upon interrogating the medical device with the wireless device, uploading the data message alert to a remote storage location via the wireless device.

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29. The method of claim 28, wherein interrogating the medical device with the wireless device comprises periodically establishing communication with the medical device and reading at least a portion of the memory and wherein uploading the data message alert comprises transmitting the data message alert over a network to at least  
15 one of a remote database and the computing device.

30. A computer program product comprising a computer usable medium having control logic stored therein for causing a computer to provide and communicate data message alerts stored on a medical device, the control logic comprising computer  
20 readable program code for causing the computer to:

          interrogate the medical device; and

          upon interrogating the medical device, communicate a data message alert stored in a memory of the medical device wherein the data message alert originates from outside the medical device.

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31. The computer program product of claim 30, further comprising computer readable program code for causing the computer to detect whether the data message alert is stored in a dedicated alert field within the memory of the medical device wherein the data message alert is communicated in response to detecting the data  
30 message alert stored in the dedicated alert field.

32. The computer program product of claim 31, further comprising computer readable program code for causing the computer to:

receive the data message alert; and

in response to receiving the data message alert, save the data message alert to  
5 the dedicated alert field of the medical device.

33. The computer program product of claim 30, further comprising computer readable code for causing the computer to at least one of initialize and install the medical device prior to interrogating the medical device wherein the computer readable  
10 code for initializing the medical device includes computer readable code for causing the computer to clear the memory of any data message alerts.

34. The computer program product of claim 30, wherein the computer readable code for causing the computer to communicate the data message alert includes computer  
15 readable code for causing the computer to communicate the data message alert in at least one of a variety of data formats compatible for storage in the memory wherein at least one of the data message alert and the variety of data formats compatible for storage in the memory include at least one of the following data formats:

ASCII text;

20 multi-media;

audio;

audio encoding schema;

XML; and

XML schema definition.

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35. A propagated signal on a carrier detectable by a computing system and encoding data and a computer program of instructions for executing a computer process for providing and communicating data message alerts stored on a medical device, the computer process comprising:

- 5       receiving a data message alert via a programmer;  
      in response to receiving the data message alert, saving the data message alert to a memory of the medical device;  
      interrogating the medical device; and  
      upon interrogating the medical device, communicating the data message alert  
10 via the programmer wherein the data message alert originates from outside the medical device.

36. A system for providing and communicating data message alerts stored on a medical device, the system comprising:

- 15       a programmer, a medical device, a link between the programmer and the medical device;  
      the programmer operative to provide and communicate a data message alert stored on the medical device;  
      the medical device storing the data message alert in a memory of the medical  
20 device; and  
      the programmer operative to interrogate the medical device and upon interrogating the medical device, communicate the data message alert wherein the data message alert originates from outside the medical device.

- 25 37. The system of claim 36, wherein the memory includes a free form data field having the capability to store the data message alert in any data format and wherein the programmer is further operative to communicate the data message alert in any data format in which the data message alert is stored.



38. The system of claim 37, wherein the free form data field comprises a dedicated alert field and wherein the programmer is further operative to detect whether the data message alert is stored in the dedicated alert field and in response to detecting the data message alert stored, communicate the data message alert.

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39. The system of claim 36, wherein the link between the programmer and the medical device comprises a radio frequency (RF) signal.

40. The system of claim 38, wherein the programmer includes means for inputting  
10 the data message alert and wherein the programmer is further operative to:

receive the data message alert prior to detecting the data message alert stored;  
and

in response to receiving the data message alert, save the data message alert to  
the dedicated alert field.

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41. The system of claim 36, wherein the programmer includes at least one of a display, a printer, and an audio output device and wherein upon interrogating the medical device, the programmer communicates the data message alert as at least one of the following:

20 a pop-up window containing an ASCII text message displayed on the display;  
a pop-up window containing a multi-media message displayed on the display  
and played via the audio output device;

an audio message played via the audio output device;

25 a pop-up window containing an XML text string message displayed on the  
display; and

a printed text message printed as a header on any printout generated by the programmer until the data message alert is no longer stored in the memory of the medical device.

42. The system of claim 36, wherein the programmer is further operative to persistently communicate the data message alert until the data message alert is acknowledged.

5 43. The system of claim 36, further comprising a database, and a networked link between the programmer and the database wherein the programmer is further operative to:

upload at least one of the data message alert, associated patient data, and associated medical device data to the database in response to communicating the data  
10 message alert stored in the memory; and

in response to uploading, provide verification that at least one of the data message alert, the associated patient data, and the associated medical device data is uploaded to an associated storage location within the database.

15 44. The system of claim 36, further comprising a wireless device, a link between the wireless device and the medical device and a networked link between the wireless device and the database wherein the wireless device is operative to:

interrogate the medical device in response to the medical device being within a communications range of the wireless device therein detecting whether the data  
20 message alert is stored in the memory; and

in response to detecting the data message alert stored in the memory, upload at least one of the data message alert, associated patient data, and associated medical device data to the database.

25 45. The system of claim 36, further comprising a wireless device, a link between the wireless device and the medical device and a networked link between the wireless device and the programmer wherein the wireless device is operative to:

interrogate the medical device in response to the medical device being within a communications range of the wireless device; and

30 upon interrogating the medical device, upload the data message alert to the programmer via the networked link.